

REMARKS

Claims 1-10 and 12-15 were pending. By way of the Reply, claims 1-2 and 13 are amended and claims 14-15 are cancelled without prejudice or disclaimer. No claims are added. Claims 1-10 and 12-13 remain pending and are submitted for consideration.

Applicants thank the Examiner for considering the arguments presented in response to the Office Action dated January 13, 2010.

Rejections under 35 U.S.C. § 103 – Neerinck and Moronuki

Claims 1-10 and 12-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,228,471 (hereinafter “Neerinck”) in view of U.S. Patent No. 6,821,497 (hereinafter “Moronuki”), which cites to JP 10-130865. Claims 14-15 have been cancelled. The rejection of claims 14-15 is, therefore, moot.

Claim 1, as amended, calls for a layered structure that comprises, amongst other things, “a first intermediate layer, said first intermediate layer consisting of a titanium based coating of at least one of Ti, TiC, TiN, and TiCN;- a second intermediate layer deposited on top of said first intermediate layer, said second intermediate layer comprising a diamond-like nanocomposite composition; and -a diamond-like carbon layer deposited on top of said second intermediate layer.” Neerinck in view of Moronuki fails to disclose, teach, or suggest such a layered structure.

The Office asserts that the data presented by Applicants in response to the Office Action dated January 13, 2010 is not persuasive because the “claims are broader than a mere disclosure of Ti+DLN+DLC” and that for the “results to be considered unexpected for purposes of obviating the combination Applicants will need to amend the instant claims as such to reflect those which they have proper unexpected results for.” (Office Action, pg. 2). In the instant Reply, the claims have been amended as suggested by the Office. Accordingly, the claims reflect those for which the Applicants previously provided unexpected results.

The Office also asserts that “it cannot be readily gleaned how the combination of Neerinck and Moronuki does not result in Ti+DLN+DLC as Neerinck teaches DLN+DLC and Moronuki teaches adding a metal intermediary between a substrate and DLN ... the Applicants seem to be attacking both of the references individually and not in combination of them in this attempt to show an unexpected result.” (Office Action, pgs. 2-3). The Office is

incorrect in asserting that Applicants' must attack both Neerinck and Moronuki in combination to show an unexpected result. Applicants must compare the claimed invention with the closest prior art, but Applicants are not required to compare the claimed invention with what is suggested by a combination of references relied upon to reject the claims under 35 U.S.C. § 103 because doing so "would be requiring comparison of the results of the invention with the results of the invention."¹ (M.P.E.P. § 716.02(e)(III)). In other words, Applicants are not required to attack Neerinck and Moronuki in combination to show an unexpected result. Instead, Applicants are merely required to compare the claimed invention with the closest prior art.

Applicants compared the claimed invention to the closest prior art. Applicants compared the claimed invention to DLN + DLC, which the Office asserts is taught by Neerinck², and Applicants compared the claimed invention to Ti + DLC, which the Office asserts is taught by Moronuki.³ In comparing the claimed invention to DLN + DLC and Ti + DLC, Applicants proved that the claimed invention results in unexpected advantageous properties being attained. For example, as provided in Applicants' application and as discussed in response to the Office Action dated January 13, 2010, Applicants compared the following three coating types to one another: (a) DLN + DLC, (b) Ti + DLC, and (c) Ti + DLN + DLC. Applicants proved that coating type (c) displays unexpected results. Coating type (c) displays better adhesion attributes than coating type (a) and the ability to withstand a greater critical load before delamination occurs than coating types (a) and (b). Coating type (c) also displays better scratch resistance than coating types (a) and (b). Coating type (c) is the only coating type that displays excellence in high shear applications and high impact loading applications. The life time of coating in high impact aluminum metal forming applications of coating type (c) is 3 to 4 times higher than the lifetime of coating type (b).

It could not be predicted by one of ordinary skill in the art at the time of invention that the use of a coating with Ti + DLN + DLC would increase the performance in high and low

¹ Applicants do not concede that a prima facie case of obviousness has been made.

² Office Action, pg. 2.

³ Office Action, pg. 2.

shear applications and that the life time in high impact aluminum metal forming applications would be increased to such an extent.

For all of the aforementioned reasons, the rejection of claim 1 is improper. Independent claim 13 recites similar and/or analogous elements to claim 1 and is allowable at least for the same reasons that independent claim 1 is allowable. Claims 2-10 and 12 depend from claim 1 and are allowable for at least the reasons set forth above, without regard to the further patentable elements contained in claims 2-10 and 12. Favorable consideration and withdrawal of the 35 U.S.C. § 103 rejection is respectfully requested.

CONCLUSION

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 9/2/2010

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